

SECTION 3.0 FUTURE WITHOUT PROJECT CONDITION

3.1 INTRODUCTION

The Future Without Project condition represents the condition of the study area as it would be expected to develop, if no improvements were made to Eastern Tamiami Trail for the MWD "design flow" of 4,000 cfs. Under no-action, implementation of the other MWD project elements (raising Tiger Tail and Osceola Camps, building mitigation features for the 8.5 Square Mile Area; improvement of conveyance of water across the L-67 levees inside Water Conservation Area 3, and improvement of Taylor Slough Bridges) would go forward. Operations of the "MWD" project would be as determined in the Combined Structural and Operational Plan Study (now underway). Conveyance of maximum "Mod Waters" flows might be somewhat constrained by requirement to avoid severe road damage. It is known that the existing culverts have the capacity to pass MWD "design flow" cited in the 1992 GRR/SEIS. However, as discussed in this report, doing so might lead to an increased probability of road damage due to overtopping and lead to a requirement for mitigation or compensation to the road's owner, FDOT, and it would also lead to temporary ponding of water in the L-29 borrow canal that parallels Tamiami Trail to the north. Under the without-project condition, the Phase I and Phase II WCA-3 Decompartmentalization project of the Comprehensive Everglades Restoration Plan (CERP) would re-evaluate conveyance requirements across Tamiami Trail, and might require a greater conveyance capacity than that proposed in the 1992 report, as CERP "design flows" across eastern Tamiami Trail are projected to be higher, up to 5,200. For the greater Everglades ecosystem, lack of improvements to eastern Tamiami Trail would probably mean flows would reach the south side of the Trail more slowly; they would be concentrated at a few points rather than arriving over a broad front; and system connectivity might be impaired. .

The purpose of the MWD Project is to deliver greater volumes of water into the L-29 Canal for the restoration, to the extent practicable, of hydrology in Northeast Shark River Slough in ENP. This greater volume will create higher water levels in the Everglades and create a "backwater" effect on the south side of the Tamiami Trail. Given this higher water level, the configuration of the existing culverts (invert, size and location), and the head-loss through the culverts needed to pass the greater volume of water, water levels in the L-29 Canal will be even higher. These higher water levels can cause road deterioration and present other safety issues. Additional openings in the Tamiami Trail are needed to minimize head-loss across the road and eliminate the safety concerns.

3.2 FUTURE WATER DELIVERIES

The MWD project will modify the existing Central and Southern Florida Project to provide a more natural flow regime to ENP. North of the L-29 canal, the MWD project calls for connecting WCA-3A to WCA-3B through a series of structures in the L-67A and L-67C levees. The current approved project calls for gated control structures in these levees, however there is a proposal to use “passive” weirs instead. This proposal is known as the “Conveyance and Seepage” study. These gated structures have not yet been constructed. The MWD project calls for passing a volume of water through WCA-3B, but not significantly changing the water levels. (The volume introduced into WCA-3B will equal the volume released.) In addition, the L-67 Extension will be degraded upon completion of the project.

In addition to the current water control structures (S-333 & S-334), the MWD project includes the construction of S-355A&B in the L-29 Levee and pumping station S-356 at the eastern end of the project area. These structures will allow the flow conveyed under the Tamiami Trail to reach approximately 4,000 cfs. The S-355A&B water control structures will pass water from WCA-3B into ENP. The S-356 pumping station, already built under the “Interim Operating Plan (USACE, 2002), will return seepage water collected in the L-31N back to the L-29 Canal. As part of the “Conveyance and Seepage” study, additional weirs in the L-29 Levee are proposed. Once the MWD project features are complete and land acquired, constraints to reaching the L-29 Canal stages will be lifted.

Water levels south of Tamiami Trail will not be managed. Water levels are associated with flow through the Tamiami Trail culverts, rainfall, seepage, and evapotranspiration. However, because of the enhanced ability to provide water into the L-29 Canal and the lifting of the constraints, water levels could become much higher. Because of the greater flows and higher water levels, the study of modifications to Tamiami Trail is being conducted.

Without the construction of modifications to Tamiami Trail, the future without project condition may involve constraints on water management operations in the project area. The potential area of concern is overtopping and saturation of the subgrade of the highway during high water events. This would potentially affect public safety and the safety needs of ENP and have adverse impact to residents and businesses in the area.

3.3 INTERIM FLOW TARGETS AND THE INTERIM OPERATIONAL PLAN

Prior to 1989, in addition to rainfall, ENP received its inflow through the S-12 structures (S12A, B, C, and D). These structures are located west of L-67 Extension and deliver water to ENP from WCA-3A. As part of the “Seven Point Plan”, the Park requested that water be delivered to the eastern portion of ENP (east of the L-67 Extension) into Northeast Shark River Slough. Congress authorized the Experimental Water Delivery program to permit testing of different water delivery schemes from the C&SF project. A series of tests have been used – most involve a “rainfall-based” delivery formula that specifies the amount of water to be delivered to ENP in weekly volumes through the S-12s and S-333 (east of the L-67 Extension). However, because of management

constraints, S-333 usually could not deliver its required volume. Generally, the volume of flow that could not be delivered at S-333 was shifted back to the S-12s.

Several nesting colonies of Cape Sable Seaside Sparrows (CSSS) are found within the MWD project area. The CSSS is an endangered species that requires particular hydrologic conditions for successful breeding. As part of the USFWS 1999 Biological Opinion on the project, reasonable and prudent alternatives (RPAs) were developed to “preclude jeopardy” to the CSSS. These RPAs included a number of land and water management actions, which have subsequently been implemented. One set of options required early, staged closure of the S-12 structures to avoid surface flooding in the sparrow’s subpopulation A nesting area, and a re-distribution of flows to the culverts located east of the L-67 Levee. By March, 2002, 60 percent of all regulatory water releases crossing Tamiami Trail were required to occur east of the L-67 Extension.

The South Dade Conveyance System, of which the structures and canals along eastern Tamiami Trail are a part, is currently operated under the Interim Operational Plan (IOP), as described in the May, 2002 IOP FEIS, Table 2.10.

3.4 EFFECTS OF FUTURE FLOWS ON ROADWAY

As stated in the Engineering Appendix (Appendix C), the road is currently in need of maintenance. The limestone base is approximately 85 percent saturated due to capillary action and is significantly deteriorated. The asphalt surface of the road has surface environmental stress cracks and subsurface fatigue cracks. Raising the water elevation to 9.3 feet will fully saturate the base of the road, and the water table will essentially reach the bottom of the asphalt pavement at low areas of the highway. The impact is that support for the asphalt pavement will decrease, the existing cracks will deteriorate, and additional cracks will develop. The higher water is expected to accelerate deterioration of the pavement, particularly at the low areas.

Current maintenance of Tamiami Trail contains items such as damaged guardrail, small pavement patching, mowing, and litter removal. Periodic maintenance items are programmed in the Work Program and would include a re-surfacing or complete guardrail replacement. FDOT District 6 is responsible for these tasks along this section of Tamiami Trail. The average amount spent on this portion of Tamiami Trail is approximately \$40,000 annually. District 6 has been maintaining this portion of Tamiami Trail in accordance with their policies and procedures. It should also be noted that this maintenance plan is based on the current water elevation of 7.5 feet, which is 0.3 feet below the limestone base (which is, in turn, 18 inches below the asphalt at the lowest point along the road, which is at elevation 10.13 feet).

With the implementation of MWD, the primary concern from high water is damage to the embankment material, with a secondary concern from overtopping. Overtopping would cause erosion of the embankment and washouts of the shoulders and edges of the pavement. After a flow test was conducted by the Corps in the spring of 2000, it was determined these types of damages did occur in localized areas.

It appears that water may not need to overtop to cause damage, but only be within perhaps a foot of the pavement surface elevation to have sufficient wind/wave action to scour the grassy shoulders. Most of the damage witnessed was on the canal side. There is potential for damage under the non-overtopping scenarios. The roadway embankment was built of uncontrolled fill. The concern is that the fine material will adsorb water to the saturation point via capillary action two feet above the water level. FDOT currently has tests and policies in place to avoid this situation. The damage caused from the saturation weakens the support for the asphalt pavement. Because of this, the asphalt pavement will deflect more than normal under traffic, at which point structural fatigue cracking will occur, and shortly thereafter, potholes develop. This would be a road hazard potentially contributing to traffic accidents. This extensive fatigue marks the end of the pavement life, at which point the asphalt is rendered to be nothing more than a granular base. To fix this damage, it would be necessary either to remove the asphalt and build a new 6-inch asphalt pavement surface (but as long as the water levels will be high, the same failure will occur again rapidly), or level out the damaged areas and place a new 6-inch surface on top and begin raising the pavement elevation. The leveling and new 6-inch surfacing would cost approximately \$11 million; resurfacing alone would cost approximately \$3 million. These more frequent construction and repairs will result in more frequent traffic congestion, which could impact residents, tourism and businesses along the road, and in the area.

From a frequency standpoint, each time the water is at approximate *average* elevation 8.5 or higher, the above problems would occur. Large localized areas of failure could occur in many cases at approximately 8.0 feet. When the water elevation is 7.5 feet or lower, conditions will be no worse than what currently exists because the water is presently at elevation 7.5 feet. Between elevation 7.6 and 8.0 feet, there is a 50 percent chance of failure occurring.

When MWD is implemented, the high water design elevation will be raised from 7.5 feet to 9.3 feet. Once water reaches an elevation of 9.3 feet elevation, it would be one inch into the asphalt of the shoulder, which is at elevation 9.23 feet, and the limestone base would be impacted. According to FDOT, the water elevation must be at a minimum of two inches below the base of the road for the limestone base to maintain its integrity. The top of the road (crown) is at elevation 9.8 feet at the low points of the highway and 10.1 feet at the high points. The limestone base is located approximately 18 inches below the asphalt, which is 6 inches thick.

Water would begin overtopping of the highway at an event frequency of between 200 and 500 years. This would cause the road to be closed which would severely impact tourism, residents and businesses along the road. Tamiami Trail provides critical eastbound and westbound coast-to-coast access between Miami and Naples and would be utilized for evacuation, if necessary.

SECTION 4.0 PROBLEMS, OPPORTUNITIES AND CONSTRAINTS

4.1 FLOOD DAMAGE TO ROAD

The potential adverse impacts posed by the MWD project are due to the higher water stages in the L-29 Canal. These high water levels will increase damage to US 41. After the high water subsides, a number of problems could develop.

1. Overtopped roadways could present unforeseen problems for motorists traveling along Tamiami Trail. This could include temporary road closures and accident from ponded water on the road.
2. Extended saturation of the materials supporting the roadway may cause deterioration of the subgrade from prolonged elevated water levels in the L-29 Canal. When the water elevation is raised, the limerock base layer would become saturated and soften. The diminution of the strength of the base layer would accelerate the cracking of the road that currently exists. The resulting cracks and large potholes would be traffic and accident hazards.
3. Higher water stages could reduce the integrity of the roadway, resulting in increased cost of repair and maintenance. The current costs for road maintenance in this portion of the roadway are approximately \$40,000 annually. This amount does not include the routine cost of resurfacing and milling, the maximum interval of which is ten years. However, implementation of the project will expose the highway to a greater frequency of saturation, resulting in a potential increase in maintenance requirements. Saturation will aggravate the pavement condition and accelerate the settlement, resulting in a gradually increased frequency of pavement repair and restoration.

Construction of this project is an opportunity to reduce these problems by reducing the water levels on the north side of the road due to ponding.

4.2 HURRICANE EVACUATION

Because of its location as the southern-most east-west artery across the state, Tamiami Trail provides critical eastbound and westbound coast-to-coast access between Miami and Naples and would be utilized for hurricane evacuation, if necessary. Traffic would be maintained in both directions. The closest "officially designated" eastbound and westbound coast-to-coast hurricane evacuation route (with a need to reverse lane) is Interstate Highway 75 Alligator Alley, which is located approximately 20 miles north of Tamiami Trail. Tamiami Trail will undoubtedly be used, and this need is a constraint to operations. Current operations of the South Dade Canal System (combined Mod Waters, L-31 N and C-111 features) allow drawdown of the system's canals in anticipation of

meteorological storm events, to provide capacity in the canals for anticipated stormwater flows.

4.3 ENVIRONMENTAL RESOURCES

Environmental resource Problems and opportunities concern mostly biological resource constraints and hydrologic connectivity. Implementation of any of the considered action alternatives provides the opportunity for improving north to south ecological connectivity. Because the ENP “possesses outstanding universal value”, it has been designated A World Heritage Site by the United Nations. ENP provides habitat for approximately 25 terrestrial and two aquatic species of mammals. The avian fauna of ENP is especially rich; over 300 species of birds have been identified. The U. S. Fish and Wildlife Service has identified 16 species of animals Federally listed as threatened or endangered under the Endangered Species Act. South Florida’s location makes it a migratory crossroads for West Indian and Central and South American birds while numerous North American species are residents. Most of the historic wetland communities exist at present, although changes have occurred in the species composition, structure, and spatial distribution of some communities as a result of altered hydrologic conditions. Reduction of hydroperiod and altered hydrologic connectivity threaten many of the ENP flora and fauna. Establishment of features that increase conveyance through Tamiami Trail will also provide greater hydrologic connectivity and (at least locally) more natural hydroperiods, on which threatened flora and fauna depend.

Additional problems/constraints for project implementation are the presence of wading bird colonies and endangered species rookery sites. The USFWS has delineated Primary and Secondary Zones, which impose construction restrictions during the nesting season. This is detailed in Section 5.7.5.6.

4.4 WCA-3 DECOMPARTMENTALIZATION (CERP)

The partitioning of the Everglades by levees, canals, and roads created a problem. It has created barriers to the free movement of organisms, particularly those with limited mobility, such as aquatic organisms (fishes, invertebrates, etc.).

The Tamiami Trail, the L-29 Canal, and the L-29 Levee are impediments to the free movement of organisms between ENP and WCA-3B. For aquatic organisms, the L-29 Levee and its associated water control structures obstruct movement between the L-29 Canal and WCA-3B. Aquatic connectivity between the L-29 Canal and ENP is currently limited to the series of small culverts under the Tamiami Trail. For terrestrial organisms not only is the L-29 Canal a potential obstruction that must be crossed by swimming, but traffic mortality on the Tamiami Trail reduces the free movement of animals.

A goal of CERP is to reduce compartmentalization of the Everglades and promote ecological connectivity. Ecological connectivity can be achieved through connections, corridors, or other means that provide organisms the ability to overcome the isolation of populations.

It may become desirable to restore ecological connectivity between WCA-3B and ENP through the removal of the L-29 levee and partial filling of the Tamiami Canal. This is a recommended project feature of CERP.

This project offers the opportunity to implement a feature ore compatible with CERP de-compartmentalization by reducing the barrier effects of the highway and promoting an increased opportunity for movement between the L-29 Canal and ENP.

4.5 CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL PROJECT EFFECTS ON NATURAL HYDROLOGY

Major characteristics of South Florida hydrology are local rainfall, evapotranspiration, canals and water control structures, flat topography and the highly permeable Biscayne Aquifer. Water introduced from either direct rainfall or canals is rapidly removed by evapotranspiration, seepage into the aquifer, or canal and overland surface drainage to the Atlantic Ocean, Florida Bay, or the Gulf of Mexico.

In the last 50 years, the construction of the C&SF Project has created many problems by converted nearly half of the original Everglades ecosystem to agricultural and urban uses. The hydrology of the remaining Everglades has become altered by the operation of the C&SF Project. The average annual flows and surface water stages have been reduced, and regional groundwater has been lowered. Annual hydroperiods have been increased or decreased depending on location. Long and short hydroperiod wetlands have been relocated geographically. The extent of long hydroperiod refugia was reduced. The frequency, duration, and magnitude of interannual wet and dry cycles have been changed. Additionally, salinity levels in estuaries have been altered. The construction and operation of the C&SF Project provided a network of canals and levees that have accelerated the spread of polluted water, sediments, and exotic species. The project greatly reduced the water storage capacity within the remaining natural system and created an unnatural mosaic of impounded, fragmented, and both over-inundated and over-drained marshes throughout the system.

More water flow now occurs through canals to the east and less to ENP and Florida Bay than occurred historically. Generally, the Everglades receive too much water during wet periods and too little during droughts. As a result of flood protection plans, the wetlands are over-drained. In wet periods, water is impounded in the WCAs, and then discharged to Everglades or coastal canals. During dry periods, water can flow through the canals to coastal areas and bypass the wetlands. Everglades water quality is threatened by the runoff from adjacent urban and agricultural lands, since water delivered during dry periods may contain unwanted nutrients, dissolved minerals, pesticides, and pollutants from urban areas. Changes in hydrology have also altered Everglades topography due to drainage, soil oxidation, subsidence, and burning. Large areas remain flooded for long periods, while other areas are kept almost dry. The timing of wet and dry cycles has also been altered, resulting in water conditions that do not correspond to life cycles of native species.

The project is an element in the restoration to the extent practicable of more natural flows to the Everglades. The modification of the Tamiami Trail offers the opportunity for water to be conveyed with fewer obstructions to NESRS and ENP.

4.6 CONSTRAINTS

While planning objectives describe the goals of the Study, there are certain limitations that must be considered in evaluating any plan for possible implementation. These limitations are considered to be planning constraints. Programmatic constraints that involve maintaining consistency with Federal and State programs and actions include:

- **Conveyance Capacity across Tamiami Trail.** This project must provide the appropriate capacity to convey MWD flows across the Tamiami Trail in a safe and effective manner that is consistent with the restoration objectives of this project.
- **FHWA and FDOT Requirements.** This project involves the modification of a Federal Highway (U.S. 41). The completed project must provide the public with a facility that meets the highway standards required by the Federal Highway Administration and the Florida Department of Transportation.
- **Florida Coastal Zone Management Program.** This project is located within the designated Coastal Zone of the State of Florida. Therefore, it is necessary that the project maintain consistency with the requirements of the Florida Coastal Zone Management Program. Part of that program involves the receipt of an official determination by FDEP that the project is consistent with the Florida Water Quality Criteria.
- **Flood Control.** This project must not adversely affect the ability of any channels or structures to provide currently authorized flood control measures to the public.
- **Other MWD Components.** This project is a component of the overall Modified Water Deliveries Program. Therefore, the project must maintain full consistency with the other MWD component projects.
- **National Park Protection and Expansion Act of 1989; CERP Goals and Objectives.** This project must, within the limits of its authorization, provide for the improvement of water deliveries as specified in the Everglades National Park Protection and Expansion Act of 1989. In addition, this project must provide compatibility with the overall goals and objectives of CERP as anticipated in the Restudy.

Other constraints that are based on limitations of area resources are discussed in the remainder of this section.

4.6.1 Compatibility With Comprehensive Everglades Restoration Plan (CERP)

Implementation of WCA-3 Decompartmentalization will increase the flow of water from 4,000 cfs to 5,500 cfs under CERP.

This project is prepared under the authority of the Everglades National Park Protection and Expansion Act of 1989, to implement completion of the project to improve water

deliveries authorized in that Act. It is not intended to be the Project Implementation Report for the Initial Project in the Comprehensive Everglades Restoration Plan discussed in § 601(b)(2)(C) of the Water Resources Development Act of 2000, nor is it intended to prejudge the results of that Project Implementation Report. That Project Implementation Report will be prepared at a later date.

4.6.2 Use of the Tamiami Trail for Hurricane Evacuation

The use of Tamiami Trail for evacuation would require that the highway's capability to be utilized for evacuation be maintained during hurricane season. This may influence construction phasing and maintenance of traffic flows during construction.

4.6.3 Socioeconomic Factors

There are two locations within the project area where Native Americans reside—the Tigertail Camp, located north of the Tamiami Trail on the L-29 Levee, and the Osceola Camp, located south of the Tamiami Trail at the western end of the project within ENP lands. A policy of avoidance and minimization of impacts at both locations is an important constraint in evaluating alternative actions. Additionally, the project must provide for access to these residential areas.

There are several private businesses along the south side of the Tamiami Trail in the project area, including airboat tour operators and restaurants. All of these operations (e.g., the Coopertown Air Boat Rides and Restaurant, the Gator Park, and Everglades Safari sites) include private residences with approximately 15 residents. Gator Park has a variable number of “semi-permanent” residents in RVs who stay for extended periods. Consistent with the 1989 Everglades Protection and Expansion Act, all private property south of Tamiami Trail is in the process of being acquired by ENP, with the exception of the Airboat Association of Florida site. The Park Management Plan is currently being revised and will reflect the potential for continued operations by these businesses as concessionaires.

For purposes of this study, it is assumed that business operations will continue during and after the scheduled period of construction, and therefore, access and other impacts to these businesses will be taken into account. Road construction of any kind would have a temporary adverse impact on the businesses by reducing visitation (up to 35 percent annually based on previous experience). (Personal communication, business owners/managers).

4.6.4 Wetlands

Wetlands are present to the north and south of the project corridor. ENP, which owns or is in the process of acquiring all lands south of the Tamiami Trail, abuts the Tamiami Trail to the south, and WCA-3B is located to the north of the L-29 Levee. The L-29 Canal is potentially regulated under Section 10 of the Rivers and Harbors Act.

4.6.5 Protected Species

Coordination with USFWS and FFWCC indicated that species listed by both Federal and State governments as threatened or endangered are located near the project.

There are stands of pond apple on the southern side of most of the sets of culverts along the length of the Tamiami Trail in the project area. It was suggested by ENP hydrologists that these stands result from elevated levels of nutrients present in the water passing under the culverts, although there are other potential causes, including the placement of dredged material. At two of these stands are wood stork rookeries: the Tamiami Trail East Rookery and the Tamiami Trail West Rookery. The larger is the Tamiami Trail West, which included approximately 1,500 nests during the 1999-breeding season. The rookery boundary is located approximately 300 feet south of the existing road. A primary and secondary restriction zone established by USFWS presents a constraint with respect to construction noise and alternative alignment location, as well as a potential constraint to the timing of construction. These constraints are also imposed for the two additional rookeries in the project area, Tamiami East and Frog City. A detailed description of the rookeries and restrictions, as well as the associated figures, is included in Section 5.7.5.6.

The project must not preclude compliance with the RPAs of the February 19, 1999, USFWS Final Biological Opinion on the Cape Sable Seaside Sparrow. This calls for at least 30 percent of the regulatory water discharges from WCA-3A to be re-routed into NESRS east of the L-67 extension levees beginning March 1, 2000. These waters would enter ENP in NESRS instead of being discharged into ENP through the S-12 structures. The amount of water would rise to 45 percent and 60 percent of the regulatory water discharges in March 1, 2001, and March 1, 2002, respectively.

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4.6.6 Transfer of Everglades National Park Property to the State of Florida

Upon completion of the project, ownership of any property incorporated into the highway right-of-way would be transferred to the Florida Department of Transportation for maintenance, management, and operation.

Expansion of the existing roadway onto ENP property or construction of a new roadway on ENP property presents constraints. If the project requires the transfer of more than 200 acres from ENP to the State of Florida, authorization by Congress would be required. The approval authority of a transfer of less than 200 acres rests with the office of the Secretary of the Interior. Alternative actions that incorporate ENP property into the roadway should be avoided if possible. If it is not possible to avoid incorporating ENP property into the roadway, the amount of property should be minimized to the extent practicable.

4.6.7 Recreation Areas

The Francis S. Taylor Wildlife Management Area, which includes WCA-3B, is managed by FFWCC. This area is managed for both consumptive (hunting, frogging, fishing) and non-consumptive (wildlife viewing, camping, boating, airboating, etc.) recreational use and environmental purposes.

BJP-3

WCA-3B is accessed on its south side by crossing the L-29 Canal at either S-333 or S-334 and utilizing the boat and airboat ramps proximate to these structures. The verge between the north bank of the L-29 Canal and the L-29 Levee can be used for passage along the canal, picnicking, or boat launch into L-29 Canal. A two-track roadway atop the L-29 Levee allows panoramic views to the north into WCA-3B. Fishing from the north shoulder of Tamiami Trail (south bank of L-29 Canal) is popular, as is fishing at the culvert outfalls on the south side of the highway. Three businesses on the south side of Tamiami Trail offer short excursions out into the Everglades. The airboat drivers also act as tour guides and provide information and explanation about the Everglades and the flora and fauna.

Under existing conditions, the views afforded to persons driving on the Tamiami Trail are limited. On the north side, one sees the canal and the L-29 Levee. The view to the south is usually blocked by vegetation growing close to the south side of the roadway. Occasional breaks in the vegetative wall provide glimpses of the Everglades.

4.6.8 Section 4(f) Considerations

Section 4(f) of the Department of Transportation Act of 1966, which protects certain public lands and all historic sites, technically was repealed in 1983 when it was codified, without substantive change, as 49 U.S.C. 303. U.S. Department of Transportation regulations continue to refer to Section 4(f), because it would create "needless confusion to do otherwise;" the policies engendered by Section 4(f) are widely referred to as "Section 4(f)" matters. A provision with the same meaning is found at 23 U.S.C. 138 and applies only to the Federal Highway Administration (FHWA).

Section 303, which provides that certain procedures that must be followed for Department of Transportation activities, reads as follows:

- (a) *It is the policy of the United States Government that special effort be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.*
- (b) *The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities and facilities.*
- (c) *The Secretary may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, recreation area, refuge, or site) only if:*
 - (1) *there is no prudent and feasible alternative to using that land; and*

- (2) *the program or programs includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.*

Section 4(f) declares a national policy of preservation of public park and recreation lands, wildlife and waterfowl refuges and historic sites and prohibits the U. S. Department of Transportation (DOT) from approving any program that uses such publicly owned lands of local significance unless: (1) there is no feasible and prudent alternative, and (2) such use includes all possible planning to minimize harm.

Section 4(f) applies to all historic sites and to publicly owned public parks, recreation areas, wildlife and waterfowl refuges of local significance (4(f) lands). When a project "uses" 4(f) lands, a 4(f) evaluation is required. "Use" is broadly defined to include acquisition, occupancy, and substantial impairment amounting to constructive use. Potential 4(f) lands that could be affected by Tamiami Trail modifications include Everglades National Park, WCA-3B and the existing US 41, itself.

The DOT has established regulations for compliance with Section 4(f), which include preparation and coordination of 4(f) documents. The 4(f) evaluation requires consideration of alternatives in light of the purpose and need for the project. Section 4(f) evaluations are generally performed in conjunction with a National Environmental Policy Act (NEPA) analysis when a transportation agency is preparing NEPA documentation. Otherwise, there is a separate 4(f) evaluation and interagency coordination to insure the statutory requirements are met. Projects that use "minor amounts" of 4(f) lands may qualify for programmatic 4(f) evaluations that streamline interagency coordination.

Projects requiring DOT approval or using DOT funds may trigger the applicability of 4(f). However, this is not a DOT project. This project is funded through the Department of Interior, and it does not involve approval by DOT. Therefore, this project is not subject to 4(f) regulations, and a 4(f) evaluation is not required.

4.6.9 Condition of Existing Highway

As stated previously the road is currently in need of maintenance. The limestone base is approximately 85 percent saturated due to capillary action and is significantly deteriorated. The asphalt surface of the road has surface environmental stress cracks and subsurface fatigue cracks. On the Pavement Condition Rating, by which road surfaces are rated on a scale of 1 to 10, the Tamiami Trail would receive a Florida Department of Transportation (FDOT) rating of 6. Whenever a road is rated at 6 or below, repair actions are typically required.

4.6.10 Hydraulics and Hydrology

Existing conditions are a result of implementation of the experimental program begun in 1989. This program is, in turn, restricted by a legally mandated water level in the L-29 Canal of 7.5 feet. This corresponds to a flow of approximately 1,300 cubic feet per second (cfs). Full flow for the MWD as it is presently configured is approximately 4,000 cfs. CERP implementation would add another 1,500 cfs, bringing total design flow across the project site to approximately 5,500 cfs.

As the MWD project is implemented and in accordance with Reasonable and Prudent Alternatives (RPA) agreed to by the Corps and USFWS, water deliveries across the project site, as a percentage of the regulatory water release component from WCA-3A to ENP, will increase from the current percentage of approximately 30 percent to 45 percent in 2001 and 60 percent by December, 2003. This is the target for full operational implementation of the MWD project.

The Corps modeled hydraulic conditions comparing water levels in the L-29 Canal adjacent to the road with and without improvements to the conveyance of water. If no improvements to the conveyance were made, the limestone base of the road would be inundated regularly. Overtopping of the road could occur under certain conditions. Inundation of the limestone base would be detrimental to the integrity of the highway and should be avoided. Overtopping would likely result in the closure of the road; because the Tamiami Trail is used for hurricane evacuation, closure has a potential for affecting public safety.

Because the L-29 Canal is a conveyor and equalizer for water flows prior to passage into ENP, alternatives that would interfere with the ability of the canal to provide conveyance and equalization of flows should be avoided. This would include any significant reduction in its width or the placement of structures that would affect its capacity. The L-29 Canal is regulated under Section 10 of the Rivers and Harbors Act.

4.6.11 Structural Factors

FDOT has certain minimum standards that are required for the construction of new roadways. It would be necessary for these standards to be followed.

4.6.12 Water Quality Treatment Requirements

In accordance with Section 62-302.700 of the Florida Administrative Code (FAC), ENP was designated an "Outstanding Florida Water" (OFW), which entitles ENP to special protection with the intent of maintaining its existing good water quality. In general, FDEP cannot issue permits for direct pollutant discharges to an OFW that would adversely affect existing water quality or indirect discharges that would significantly degrade the OFW. Permits for new dredging and filling must clearly be in the public interest. Only FDEP-permitted activities would be affected with the exception of stormwater permits required by SFWMD. Some activities with direct discharges of stormwater would be required to retain or treat a larger amount of stormwater than facilities that discharge to non-OFW waters. Water management districts (SFWMD, SRWMD, SWFWMD, SJRWMD) have been delegated stormwater permitting authority. Some indirectly associated activities, such as dredging and filling, are subject to OFW standards. Other activities, such as those for maintenance of existing facilities, activities to allow or enhance public usage, and construction activities that may temporarily affect water quality, are exempted from regular OFW criteria if special safeguards are used.

Requirements for the treatment of highway runoff are determined by FDEP. As described in Chapter 62-25, FAC, *Regulation of Stormwater Discharge*, FDEP requires that all stormwater runoff be collected and directed to treatment facilities that meet specific design and performance standards. Facilities must provide retention, or

detention with filtration, of the runoff generated by the first one inch of rainfall. As an option, for projects or project subunits with drainage areas less than 100 acres, facilities may provide retention, or detention with filtration, of the runoff generated by the first one-half inch of rainfall. However, facilities discharging directly to OFW (described in Chapter 17-3 FAC) must provide additional treatment in accordance with Section 62-25.025(9) FAC. Additionally, retention or detention basins shall provide the capacity for the given volume of stormwater within 72 hours following the storm event. The additional storage volume must be provided by a decrease of water stored via percolation through soil, evaporation, or evapotranspiration.

However, by letter dated February 18, 2002, FDEP provides that construction of stormwater treatment facilities is not required as long as travel lanes or capacity is not being added to the roadway

Jurisdiction over water quality issues of this type is normally delegated by FDEP to the water management districts. Because SFWMD is a sponsor of the project, jurisdiction remains with FDEP.

Erosion and sediment control best management practices must be used as necessary during construction in order to retain sediment on site. Controls shall be developed with respect to specific site conditions.

4.6.13 Costs

Agency authorizations and budgetary constraints may limit the incorporation of features that would be desirable but not required.